SIEMENS

SIREMOBIL Iso-C

SP

Service Instructions

Replacing the horizontal lift brake

© Siemens AG 1999
The reproduction, transmission or use of this document or its contents is not permitted without express written authority. Offenders will be liable for damages. All rights, including rights created by patent grant or registration of a utility model or design, are reserved.

English
Print No.: SPR2-230.076.01.01.02
Doc. Gen. Date: 02/99
Replaces: n.a.

General

Safety information

When performing service work and tests, adhere to the product-specific safety information in the documents as well as the general safety information contained in Register 2 of the TI folder.

Miscellaneous information

These instructions describe the replacement of the horizontal lift brake on the SIREMOBIL Iso-C.

Required parts

- Magnetic brake (Item number: refer to the SIREMOBIL Iso-C spare parts list)

Required measurement and auxiliary devices

- Protective conductor meter 44 15 899 RV090

or

- Bender Safety tester 97 06 979 Y0526

Required tools

- Standard service kit
- 1 set of Allen keys
- 1 Ratchet
- 1 nut with a 30mm socket
- Spring scale to 200N
- Loctite 648 20 48 601

Additional auxiliary devices

- Block of hard wood, approx. 80mm x 60mm x 60mm (Height x length x width)
- Work table approx. 850mm x 1800mm x 800mm (height x length x width) with a bearing capacity of > 1200N.
  or
  2 work tables approx. 850mm x 1000mm x 600mm (height x length x width) with a bearing capacity of > 600N.

Preliminary steps

CAUTION

Push the wooden block under the SIREMOBIL frame prior to removing the C-arm for service. Otherwise, the frame may tip over when the C-arm is removed from the lifting column.

When placing the C-arm on the table, lower the lifting column only far enough until the C-arm is positioned flat on the table with the entire railing.

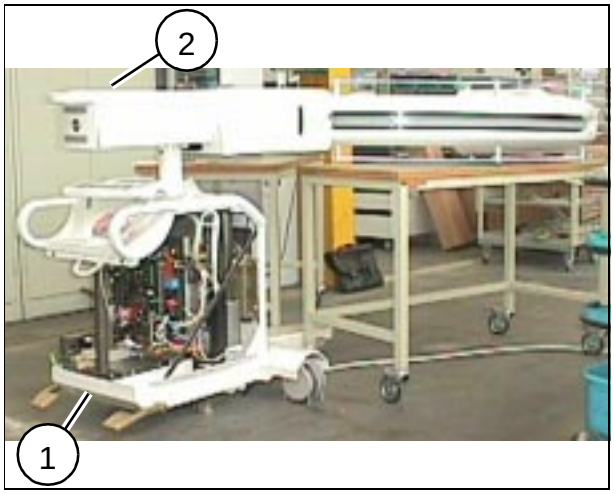

Fig. 1

- Connect the SIREMOBIL Iso-C to power .
- Position the wooden block (1/Fig. 1) underneath.
- Move the C-arm into the horizontal position (Fig. 1).
- Position the C-arm over the work table.
- Slowly move the lifting column down in increments until the C-arm is positioned just flat on the table. When doing this, make sure that the work table is centered around the C-arm and that as much of the railing as possible is lying on the table.

NOTICE

Fig. 1 shows one possible arrangement using 2 smaller work tables.

Disassembly

- Switch OFF the SIREMOBIL Iso-C.
- Remove the docking plate for the MODULARIS, if it is connected.
- Remove the cover with the brake switches (2/Fig.1) (screws are on the underside). When doing this, remove the ground cable and disconnect the connection to the switch board.

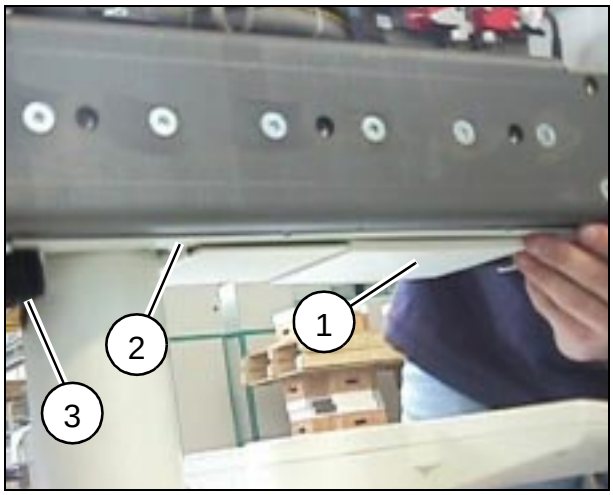

Fig. 2

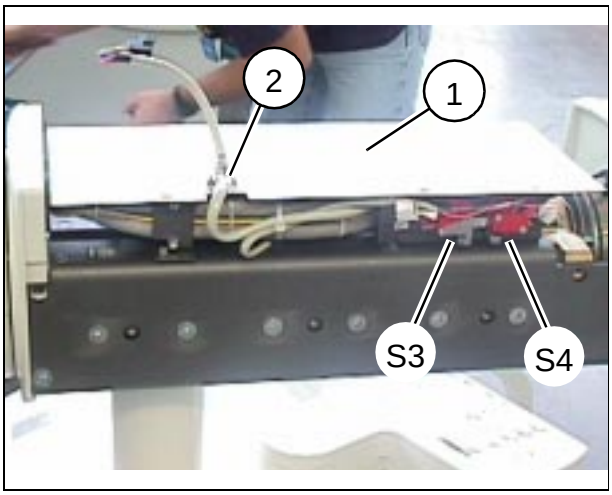

Fig. 3

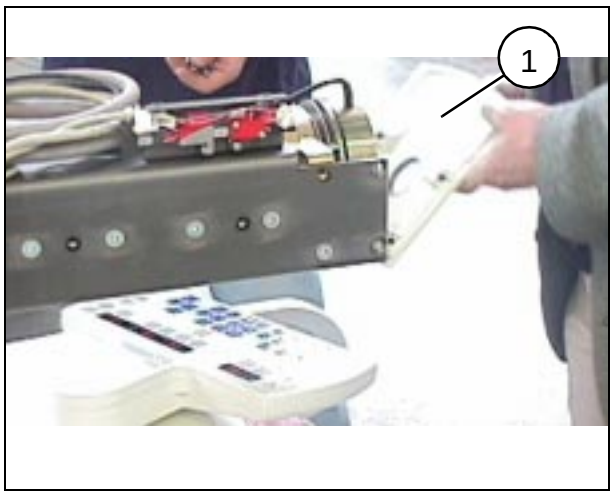

Fig. 4

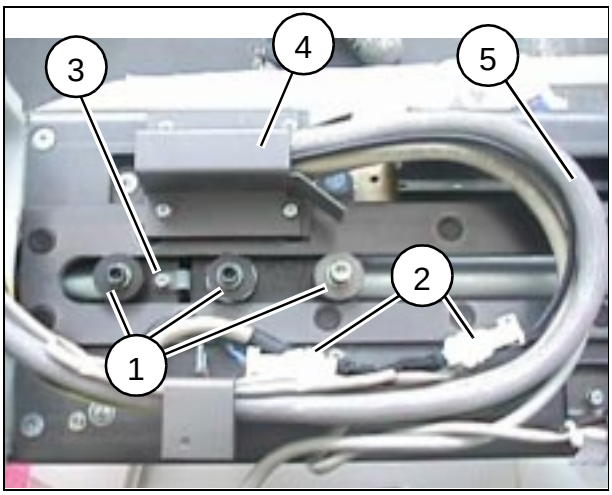

Fig. 5

- Remove the lower cover (1/Fig. 2). Loosen the screws only (2/Fig.2), but do not remove them.
- Remove the back cover (3/Fig. 2) (Velcro closure).
- Remove the upper cover plate (1/Fig. 3). Also remove the cable ties and the fastener clamps (2/Fig. 3)
- Remove the back cover (1/Fig. 4).
- Remove the guide bearings (1/Fig. 5).
- Remove plug connections X22 and X23 (2/Fig.5).
- Remove the cable clamps (3/Fig.5).
- Remove the cable guide (4/Fig.5).

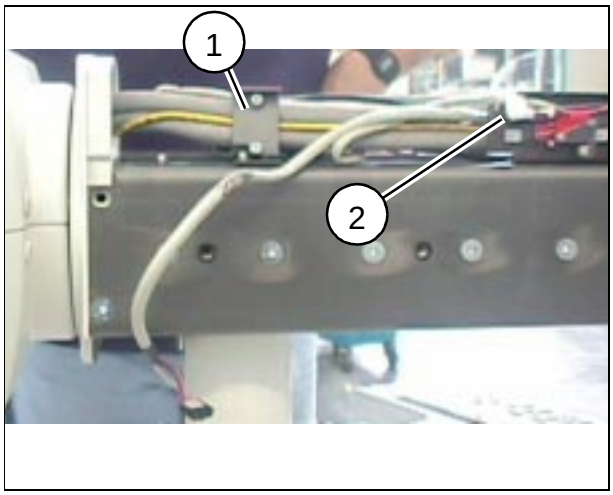

Fig. 6

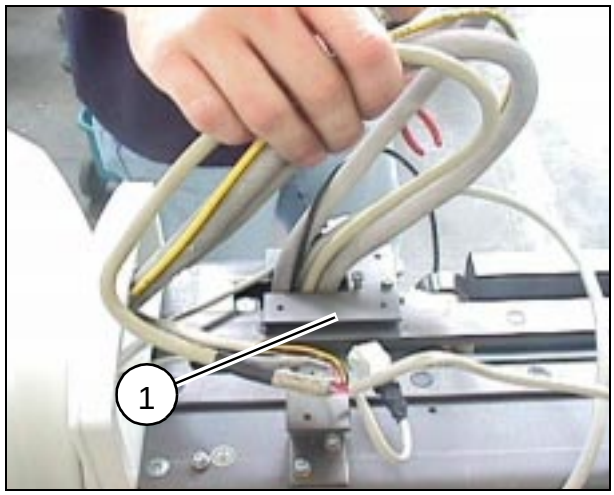

Fig. 7

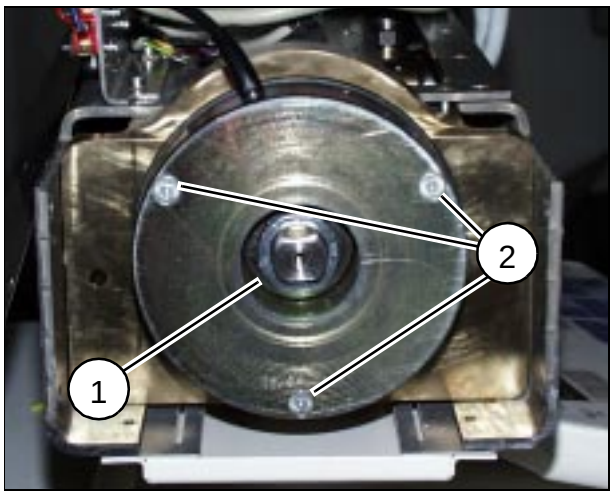

Fig. 8

Fig. 9

- Remove the cable clamp (1/Fig.6).
- Remove the cable clamp (2/Fig.6) and remove the cable ties (2/Fig.6).
- Remove the cable ties around the cable bundle (5/Fig.5).
- Remove the cover plates (1/Fig.7).
- Remove the nut (1/Fig.8). (30mm socket)
- Remove the three Allen screws (2/Fig.8) and remove the angulation brake completely. When doing this, make sure to hold onto the 3 screws of the angulation brake or use adhesive tape to prevent them from falling. Fig. 9 shows the complete angulation brake.

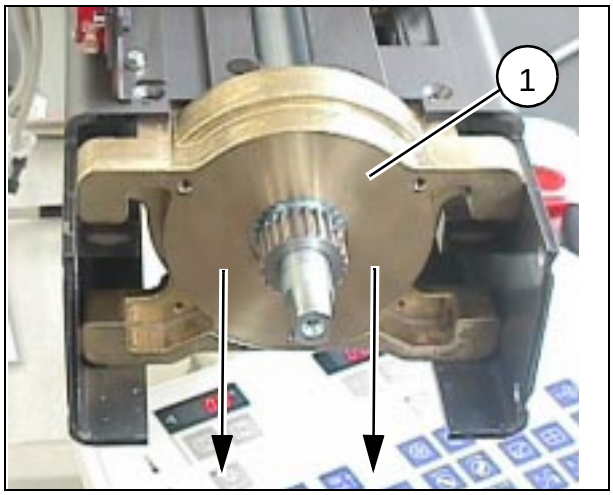

Fig. 10

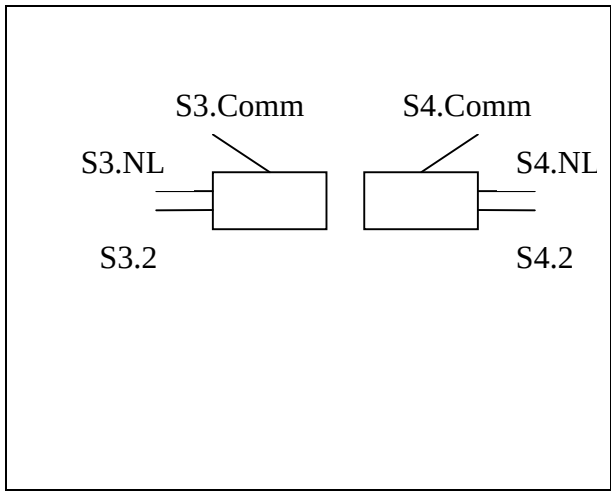

Fig. 11

- Remove the screws for the end stop (1/Fig.10).
- Connect the cables to both microswitches (refer to S3,S4/Fig.3 and Fig.11).
- Reconnect X23.
- Place the cover with the brake switches on the C-arm and plug in the test board.
- Switch ON the SIREMOBIL.
- Release the horizontal lift brake (press the switch, the LED lights).
- Move the vertical lifting column up and down until you are able to hammer the end stop (1/Fig.10) out of the horizontal carriage in the direction of the arrows (arrows/Fig. 10) without applying pressure to the shaft.
- Once the end stop has been removed, the shaft should lie horizontal within the horizontal carriage and should not be pressing against it.
- Switch OFF the SIREMOBIL.

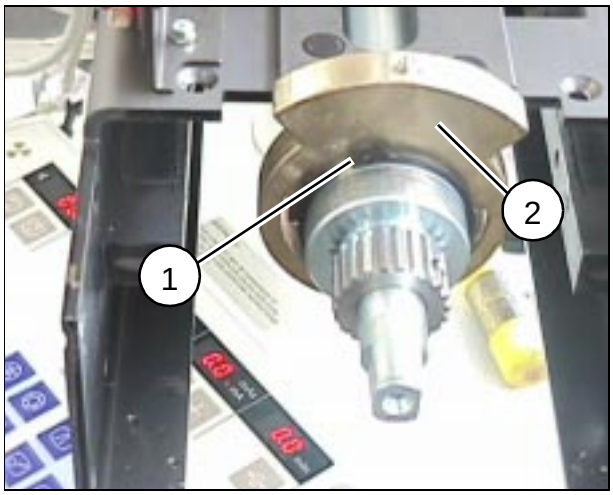

Fig. 12

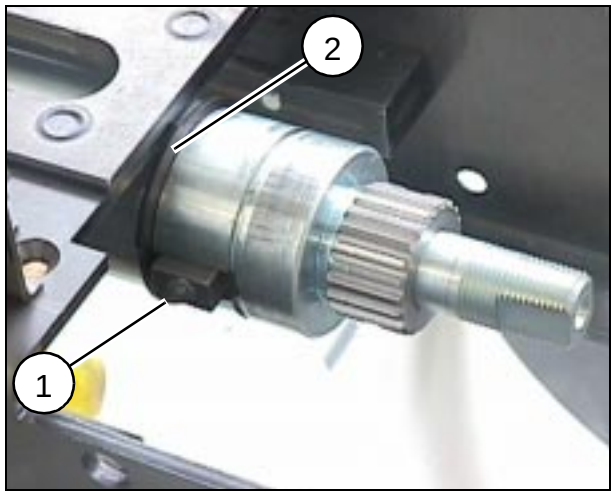

Fig. 13

- Remove the spring ring (1/Fig.12).
- Remove the stop wheel (1/Fig.12).
- Remove the end stop (1/Fig.13).
- Remove the spring ring (2/Fig.13).

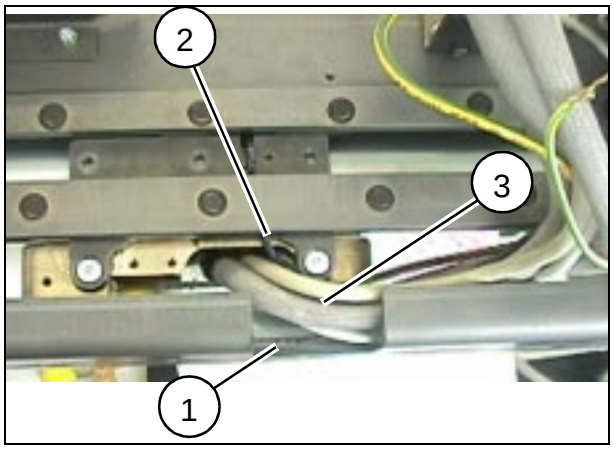

Fig. 14

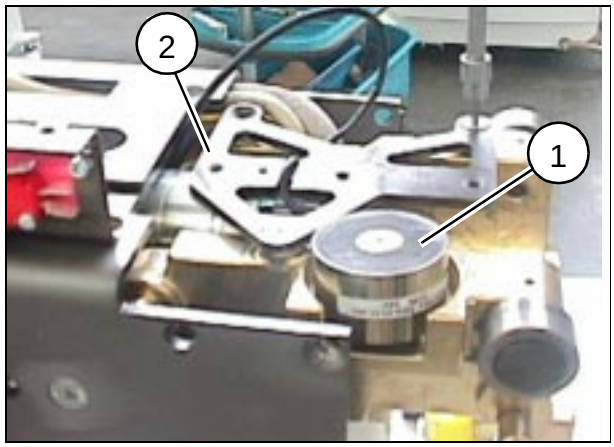

Fig. 15

- Switch ON the SIREMOBIL Iso-C and release the horizontal brake (the LED in the switch lights).
- Move the horizontal carriage so that the opening in the horizontal carriage, (1/Fig.14) as shown in Fig.14 is located opposite the opening in the bearing support (2/ Fig.14).
- Insert the cable bundle (3/Fig.14) between the horizontal carriage and the bearing support in the direction of the C-arm. When doing this, be careful not to damage or crimp the cables!

NOTICE

Two persons are required to remove the horizontal carriage. One person should be at the bearing surface of the C-arm. The second person at the horizontal carriage.

When removing the horizontal carriage, make sure that none of the cables is crimped or damaged.

- Subsequently move the horizontal carriage carefully forward out of the bearing support until the horizontal lift brake (1/Fig.15)with the plate (2/Fig.15) is accessible.
- Note the following:
  - Be careful not to crimp or damage the cables.
  - The C-arm must remain centered on the work table. Move the work table, if necessary.
  - Secure the cover with the switches to prevent it from falling.
  - When removing the horizontal carriage, keep it centered to the ball bearings. Do not tilt it.
  - You may have to adjust the position of the vertical lifting column until the horizontal carriage moves easily.
- Switch OFF the SIREMOBIL Iso-C.
- Disconnect the plug connections for the horizontal brake.
- Remove the plate (2/Fig.15).
- Remove the horizontal brake cable from the plate and lift the horizontal brake out of the bearing support.

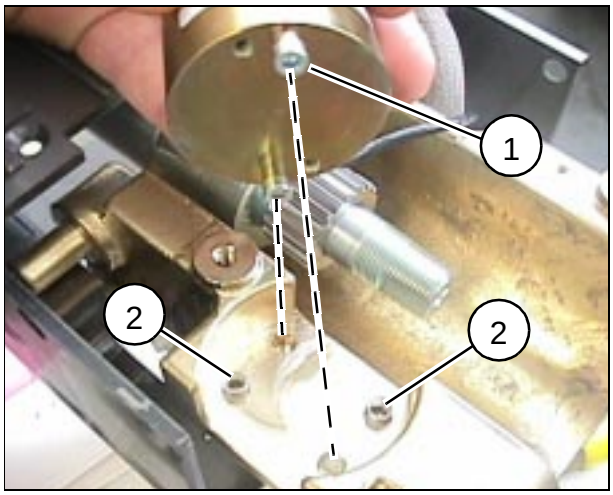

Fig. 16

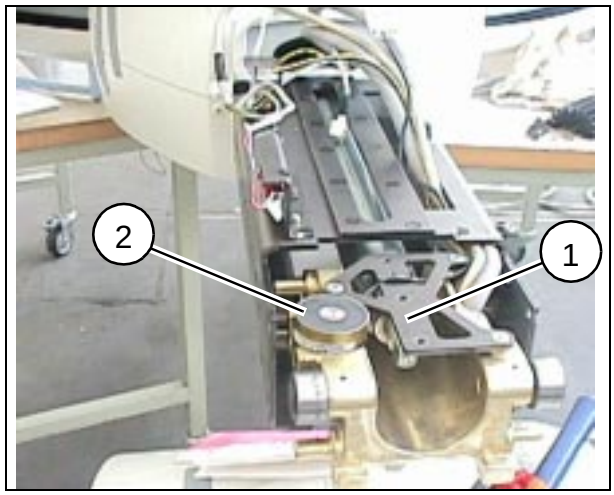

Fig. 17

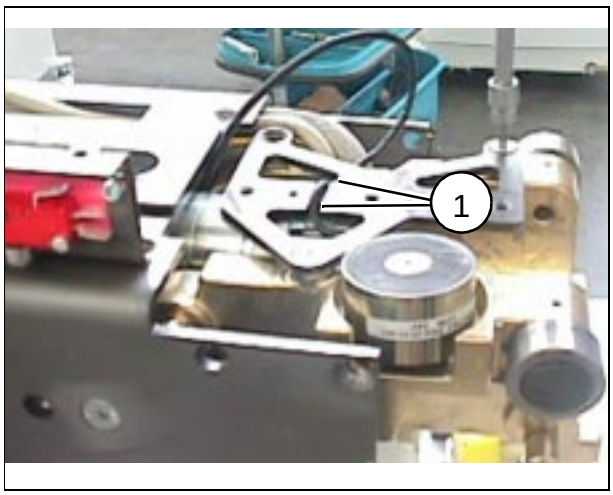

Fig. 18

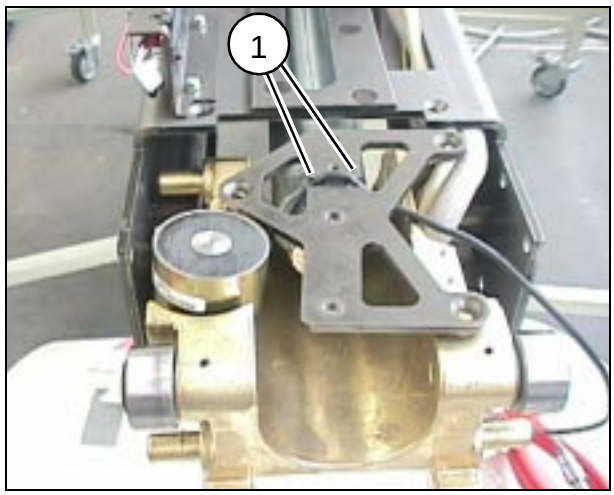

Fig. 19

Installation

- Lift the horizontal brake out of the bearing support. Reserve the two springs (2/Fig.16).
- Remove both screws from the old horizontal brake (1/Fig. 16) and install them on the new horizontal brake.
- Place the new horizontal brake in the bearing support. The two screws should not stick in the slots. (Check this by pressing down on the horizontal brake). You may have to take out the horizontal brake again and slightly bend the screws to the side (hit the screw head lightly on the side)
- Route the horizontal brake cable back through the plate (1/Fig.17). The cable must be positioned in the recess (1/Fig.18, 1/Fig.19).
- Route the cable end of the horizontal brake parallel to the cable bundle in the horizontal carriage.

- Reattach the plate (1/Fig.17) with the screws.
- Clean the braking surface of the horizontal brake (2/Fig.17). (Dirt and metal particles)
- Reattach the horizontal brake.
- Switch ON the Siremobil and release the horizontal brake.
- Insert the horizontal carriage back in the bearing support.
- Note the following:
  - Be careful not to crimp or damage the cables.
  - Be careful of the horizontal brake cable. Refer to Fig.18 and 19.
  - The C-arm must remain centered on the work table. Move the work table, if necessary.
  - Secure the cover with the switches to prevent it from falling.
  - When inserting the horizontal carriage, keep it centered to the ball bearings.
  - You may have to adjust the position of the vertical lifting column until the horizontal carriage moves easily.

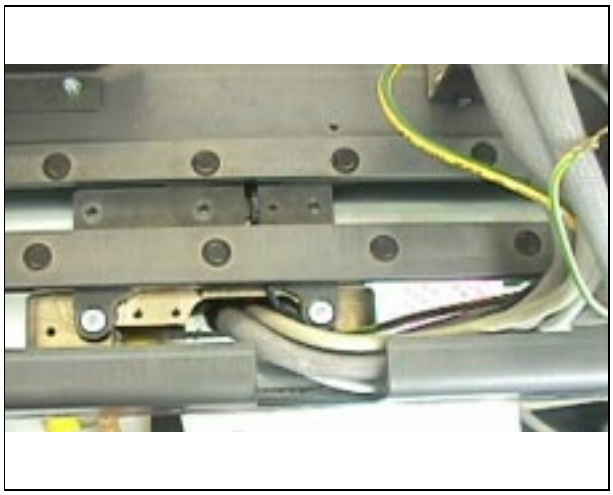

Fig. 20

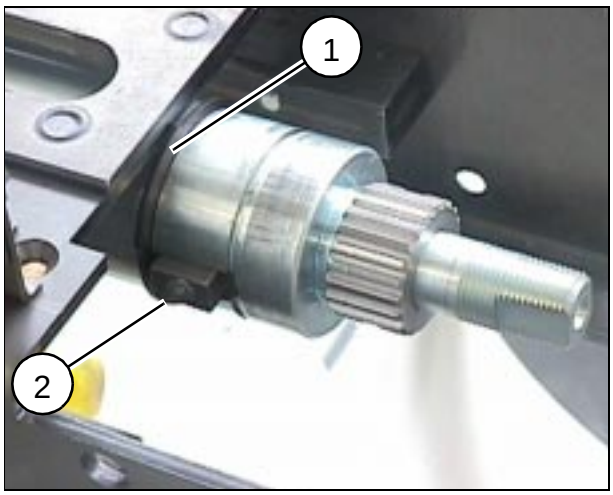

Fig. 21

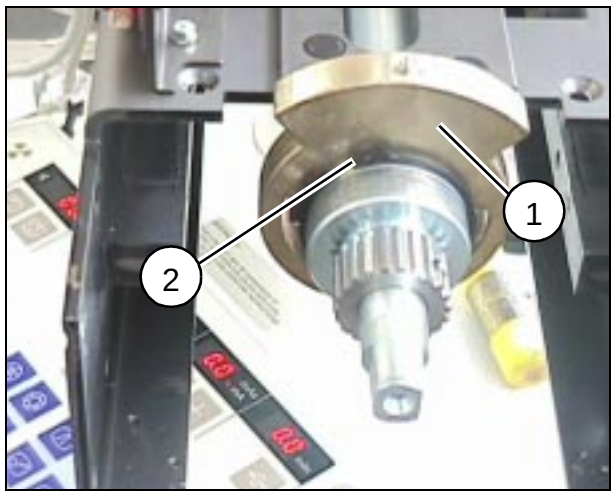

Fig. 22

- Push the horizontal lift until the cable bundle is in the position shown in Fig. 20.
- Leave the C-arm in the horizontal position (Fig.1). This position is used to determine the end stop (1/Fig 22).
- Reinstall the spring ring (1/Fig.21).
- Reattach the stop (2/Fig.21) with the screw.
- Reinstall the stop wheel (1/Fig.22).
- Reinstall the spring ring (2/Fig.22).

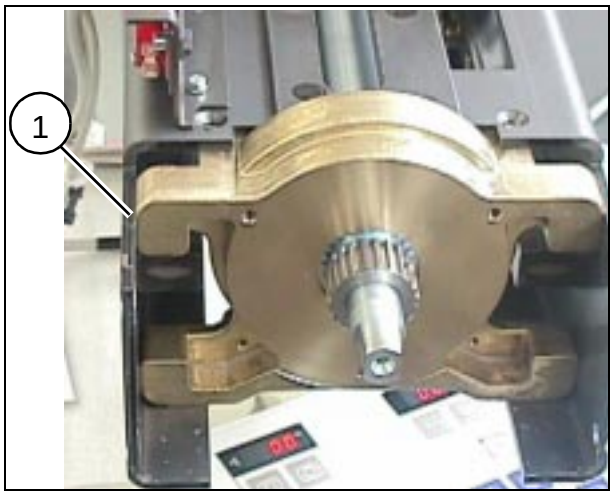

Fig. 23

Fig. 24

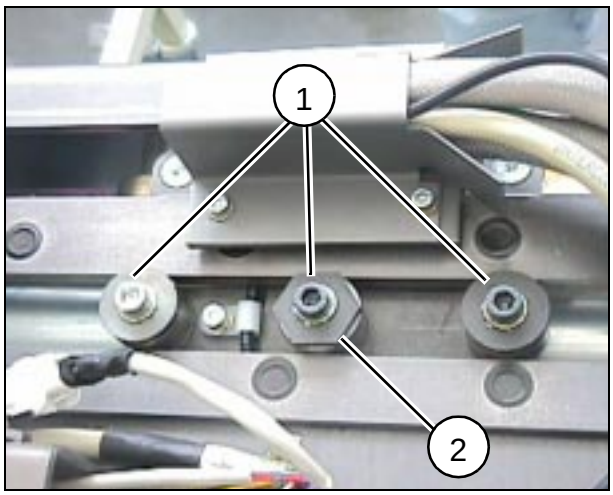

Fig. 25

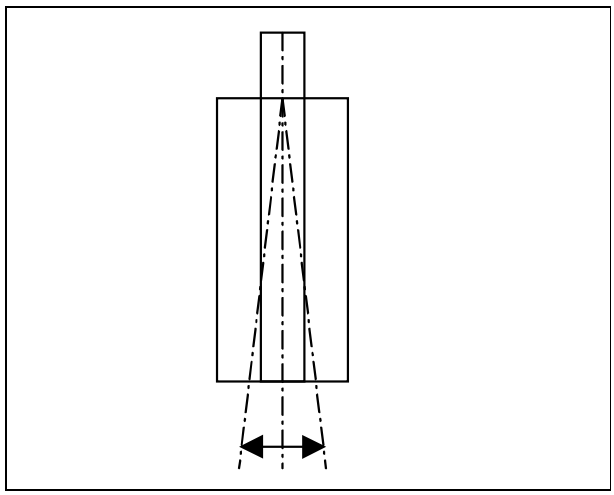

Fig. 26

- Reinstall the end stop (Fig. 23). Do not insert any screws in the threaded hole (1/Fig. 23) (This is the threaded hole for the MODULARIS docking plate)
- Remount the complete angulation brake and attach it with the screws (Fig. 24).
- Connect plugs X22/X23.
- Remount the horizontal guide bearings for the horizontal carriage. (1/Fig.25)
- The center guide bearing (2/Fig.25)is equipped with an eccentric bolt.
- Switch ON the SIREMOBIL and release the horizontal lift brake.
- Move the vertical lift until the C-arm is no longer on the work table.
- Move the horizontal carriage slowly from end stop to end stop. When doing this, the horizontal carriage should be centered on the shaft and should not drag at any point (Fig. 26 indicates the schematic top view of the horizontal carriage).You may have to adjust the eccentric bolt (2/Fig. 25).

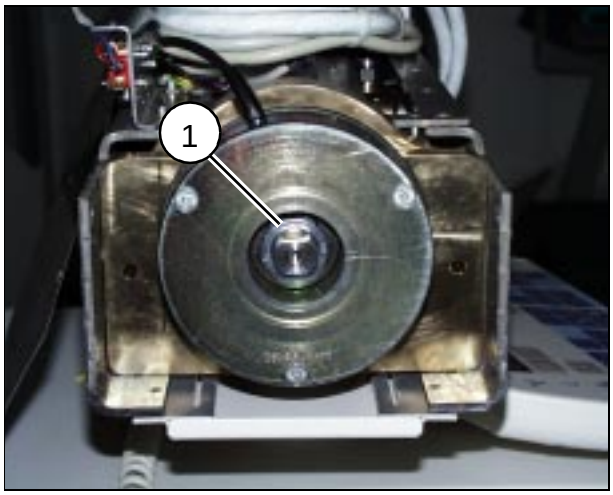

Fig. 27

- Release the angulation brake (press the brake switch, the LED lights).

NOTICE

After applying Loctite to the threads, the following adjustments and tests should be performed immediately, so that the threadlocker does not set before the adjustment is done.

- Apply one drop of Loctite to the threads (1/Fig. 27).
- Place the spring washers and the nut back on the threads.
- First, hand-tighten the nut.
- Remove the work table from the C-arm and move the C-arm into the vertical position (I.I. above, SIREPHOS below).
- Suspend a spring scale from an attachment point on the upper railing and check the movement force of the angulation movement within an angulation range of approx. +/- 45° from the vertical position.

  ➪ Force of movement, unbraked: > 20N...< 30N

  ➪ Force of movement, unbraked with MODULARIS: > 20N...< 22N

- The braking force without the brake applied can be adjusted by tightening or loosening the nut. When doing this, move the horizontal carriage several times from end stop to end stop to eliminate the play on the shaft.

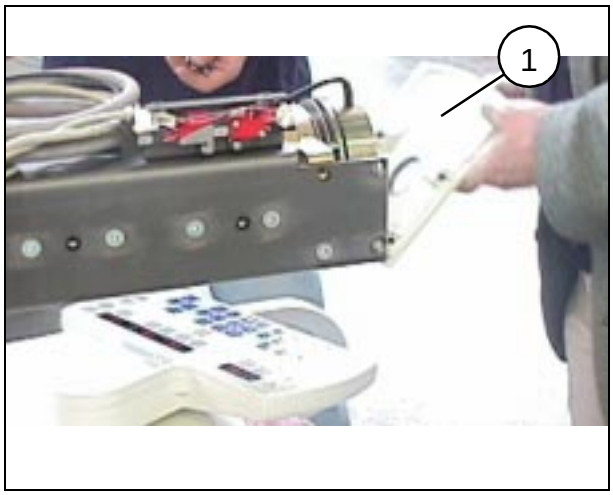

Fig. 28

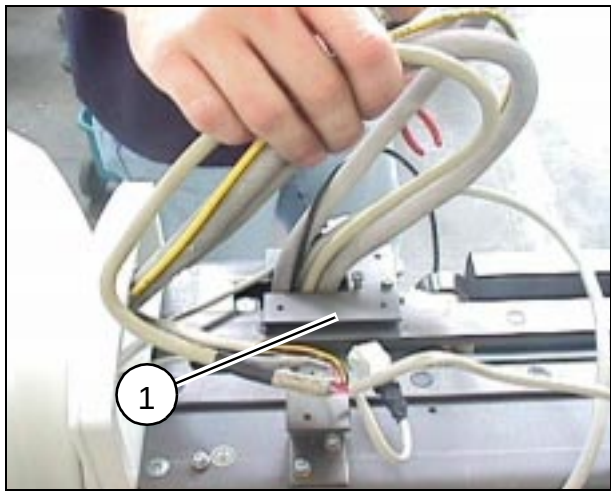

Fig. 29

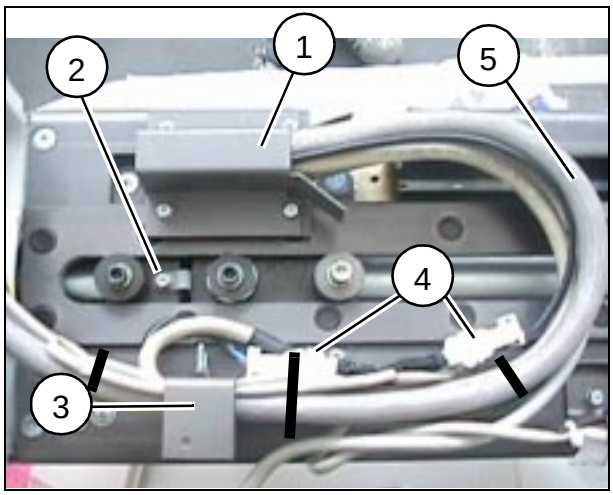

Fig. 30

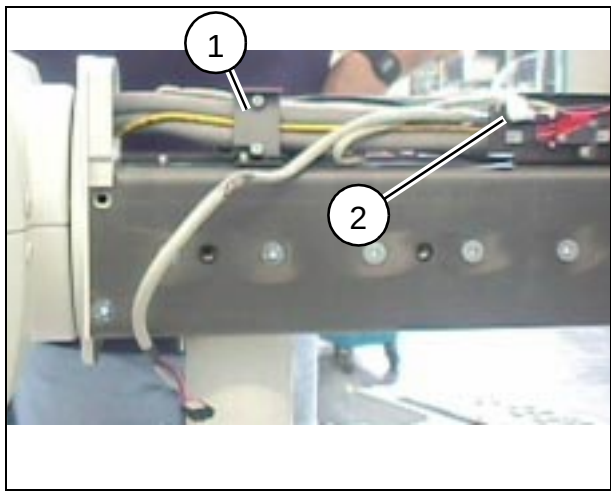

Fig. 31

- Reattach the back cover (1/Fig. 28).
- Reattach the plate (1/Fig. 29 .
- Reattach the cable guide (1/Fig. 30). Make sure that the cable bundle is routed properly.
- Reattach the cable bundle (2/Fig. 30). When doing this, make sure that the horizontal brake cable cannot rub against the horizontal carriage. If necessary, press it slightly in the recess with a flat object.
- Place the cable clamp over the bracket (3/Fig. 30).
- Reattach the cable bundle with the cable clamp (1/Fig. 31). When doing this, make sure that the cable bundle is routed correctly. (Refer to Fig. 30).
- Do not attach the cable for the brake switches (connector X1) with the other cables in the cable clamp (1/Fig. 31).

- Secure the cable bundle with cable ties at the points indicated (bold lines /Fig. 30):
  - at connector X22
  - at connector X23
  - in front of the bracket (Fig. 30/3)
- Reconnect plugs X22 and X23 (4/Fig. 30).
- Route the cables to microswitches S3 and S4 and connect them (2/Fig. 31).
- Secure the cables to the microswitches to the side of the plate with cable ties (2/Fig. 31).

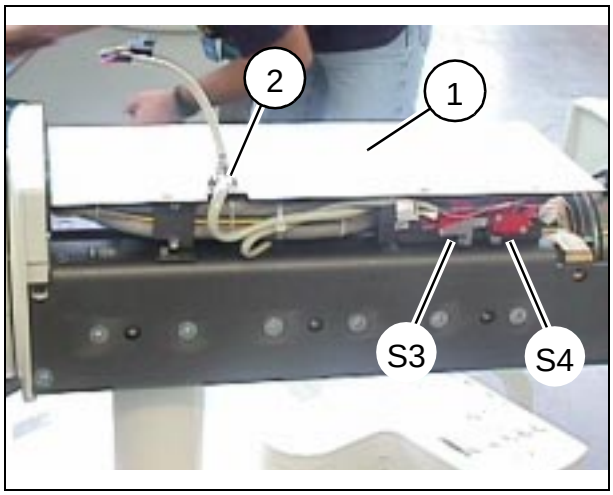

Fig. 32

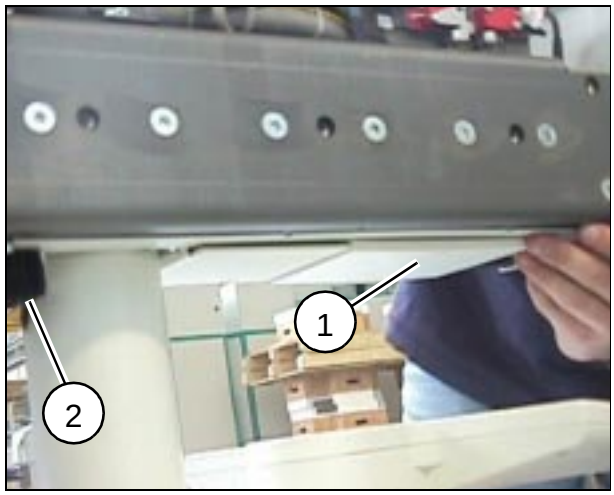

Fig. 33

- Reattach the cover plate (1/Fig. 32).
- Secure the cable to the switch board with cable clamps.
- Reattach the lower telescope cover (1/Fig. 33).
- Reattach the cover (2/Fig. 33) at the Velcro closures.
- Reconnect plug X1 to the cover with the brake switches.
- Reconnect the protective conductor to the cover with the brake switches.
- Remount the cover with the brake switches to the horizontal carriage.

Concluding work

- Check the horizontal lift for ease of movement.
- Check the angulation for ease of movement.
- After completing all service work and reattaching the covers, perform the protective conductor test in accordance with ARTD-002.731.17.
- Perform a function test on the SIREMOBIL.

TD SD 24 / Arnold
TD SD 24 / Groß

SMS Iselin / O'Donnell